

REMARKS

1. In response to the Office Action mailed March 2, 2010, Applicant respectfully requests reconsideration. Claims 12-15, 17, 19-25, 30-33, and 39-56 were last presented for examination. In the outstanding Office Action, claims 12, 14, 20, 21, 23-25, 30-33, 39, 40, 47, 48 and 52-56 were rejected. By the foregoing Amendments, claims 30, 39, 41, 42, 44, 45, 46, 49, 50 and 52 have been amended, claims 57-59 have been added, and claims 14, 21 and 25 have been cancelled. Upon entry of this paper, claims 12-13, 15, 17, 19-20, 22-24, 30-33 and 39-59 will be pending in this application. Of these thirty-four (34) claims, three (3) claims (claims 12, 39 and 47) are independent.

2. Based upon the above Amendments and following Remarks, Applicants respectfully request that all outstanding objections and rejections be reconsidered, and that they be withdrawn.

Specification

3. The title of the invention has been objected to as not being descriptive. In response, in order to advance prosecution, and without prejudice or disclaimer, Applicants hereby amend the title of the invention to be "Battery Characterization Technique Accounting for Offset Error." Reconsideration is requested.

Allowable Subject Matter

4. Applicants thank Examiner Pham for indicating that claims 13, 15, 17, 19, 22, 41-46 and 49-51 contain allowable subject matter.

Claim Objections

5. The Examiner objected to claim 46 under 37 CFR §1.75 (c) , as being improper dependent from for failing to further limit the subject matter of a previous claim. Claim 46 has been amended without prejudice or disclaimer, in order to advance prosecution, and reconsideration is requested.

Claim Rejections under §112

6. Claims 30 and 52 stands rejected as being indefinite under 35 U.S.C. §112, second paragraph. Claims 30 and 52 have been amended without prejudice or disclaimer, in order to advance prosecution, and reconsideration is requested.

Claim Rejections under §102

7. The Office Action rejects claims 39, 31 and 40 under 35 U.S.C. §102(b) as being anticipated by Munshi et al. (U.S. Patent No. 5,411,537, hereinafter “Munshi”). Further, the Office Action rejects claims 12, 14, 20, 47, 48, 55 and 56 under 35 U.S.C. §102(e) as being anticipated by Meadows et al. (U.S. Patent No. 6,553,263, hereinafter “Meadows”). In response, Applicants traverse the rejections for at least the reasons that follow.

8. Applicants rely on MPEP § 2131, entitled “Anticipation – Application of 35 U.S.C. 102(a), (b), and (e),” which states that a “claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” Section 103 amplifies the meaning of this anticipation standard by pointing out that anticipation requires that the claimed subject matter must be “*identically* disclosed or described” by the prior art reference. (Emphasis added.) MPEP § 2131 states that “[t]he identical invention must be shown in as complete detail as is contained in the...claim.” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236 (Fed. Cir. 1989). It is respectfully submitted that neither Munshi nor Meadows anticipates any pending claim.

9. Claim 39, from which claims 31 and 40 ultimately depend, recites a battery charger comprising “a measuring circuit configured to calculate an offset error of the measuring circuit while no load is placed on the rechargeable battery.” (Claim 39, emphasis added.) In an exemplary embodiment, the “measuring circuit is further configured to compensate for the calculated offset error of the measuring circuit.” (Claim 30, which depends from claim 39.)

10. An embodiment of claim 39 may be used in conjunction with a system that determines the charge remaining in a battery by mathematically integrating the measured charge and discharge current. Applicants have learned, as they have detailed in the present application at paragraph 09, that “a drawback of the current integration approach is that inaccuracies can result from the

inherent offsets in analog circuitry,” and compensating for these offsets is “more difficult to achieve for lower currents.” (Applicants’ Application, Paragraph 09.)

11. The Office Action asserts that Munshi teaches calculating an offset error of the measuring circuit by allegedly teaching the comparison of V_n (assumed *arguendo* to mean, in the Office Action, the battery voltage) with V_{max} and V_{min} at columns 11 and 12. The V_{min} and V_{max} of Munshi have nothing to do with an “offset error.” Instead, V_{min} and V_{max} are simply the boundaries of a predetermined range of voltages of a battery during recharging. That is, they are control parameters. There is nothing in the cited passages of Munshi that teaches that Munshi makes any type of calculation of an error.

12. Further, claim 39 recites calculating an “offset error of a measuring circuit.” V_{min} and V_{max} of Munshi are not parameters of a measuring circuit. Instead, they are parameters of the battery. Thus, to the extent there exists *arguendo* the calculation of offset error, it is of the battery, not of any measuring circuit.

13. Because a claim may only be rejected as anticipated if the prior art teaches the exact same invention as claimed, the anticipation rejections of claims 39, 31 and 40 are unfounded. Withdrawal of the rejections and allowance is requested.

14. Regarding independent claims 12 and 47, independent claim 12 recites a system for operating a rechargeable battery, comprising means for calculating an offset error for said determining means. Independent claim 47 recites a battery charger comprising a measuring circuit configured to calculate an offset error of the measuring circuit.

15. The Office Action asserts that Meadows teaches the calculation of an offset error by allegedly teaching at column 21, lines 40-47, “low load when battery is discharged below a second prescribed limit; calculation and determination for trickle charge as offset error.” (Office Action, page 6, lines 13-16.) This is not the same as calculating an offset error as claimed.

16. The cited passages of Meadows merely describe a dual-stage recharging system of a battery, where normal recharging occurs if the voltage of a battery falls below a first limit (e.g., 4.1 V), and trickle charge occurs if the voltage of the battery falls below a second limit (e.g., 2.5 V). (Meadows, col. 21, lines 39-45.) As with Munshi, this is merely a control

parameter, and is not error calculation, and to the extent there exists *arguendo* the calculation of offset error vis-à-vis the voltages, it is of the battery, not of any measuring circuit.

17. Neither claim 12 nor claim 47 is anticipated by Meadows, and thus no claim that depends from either of these claims is anticipated. Withdrawal of the rejections and allowance is requested.

Claim Rejections under §103

18. In the Office Action, claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Meadows. Claims 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meadows in view of Single (U.S. Patent No. 6,922,591, hereinafter, “Single”). Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Munshi in view of Hwang (U.S. Patent No. 6,049,210, hereinafter, “Hwang”). Further, claims 32-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Munshi in view of Single. Claim 52 is rejected under 35 U.S.C. 103(a) as being unpatentable over Meadows in view of Hwang, and claims 53-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meadows in view of Single.

19. In response, Applicants traverse the obviousness rejections on the grounds that each rejection is predicated upon an incorrect assessment of the scope of the teachings of Munshi and Meadows, as detailed above. Because the Office Action does not address how Single or Hwang remedy the above-identified deficiencies of Munshi and/or Meadows, all of the *Graham v. John Deere* factors have not been satisfied, and, accordingly, a *prima facie* case of obviousness has not been established. Withdrawal of the rejections and allowance of the application is requested.

Dependent claims

20. The dependent claims incorporate all the subject matter of their respective independent claims and add additional subject matter which makes them independently patentable over the art of record. Accordingly, Applicant respectfully asserts that the dependent claims are also allowable over the art of record.

New claims

21. Applicants have added new claims 57-59. These claims ultimately depend from claim 39, which, as detailed above, contains allowable subject matter. Thus, these new claims are allowable for at least this reason.

Conclusion

22. In view of the foregoing, this application should be in condition for allowance. A notice to this effect is respectfully requested.

23. Applicant reserves the right to pursue any cancelled claims or other subject matter disclosed in this application in a continuation or divisional application. Any cancellations and amendments of above claims, therefore, are not to be construed as an admission regarding the patentability of any claims and Applicant reserves the right to pursue such claims in a continuation or divisional application.

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Respectfully submitted,

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